

### Claims

1. A targeting molecule capable of specifically binding to a basolateral factor associated with an epithelial surface and causing the internalization of an imaging agent linked thereto, wherein the targeting molecule is not full length dimeric IgA.

2. A targeting molecule linked to at least one imaging agent, wherein said targeting molecule comprises a polypeptide that:

(a) forms a closed covalent loop; and

(b) contains at least three peptide domains having  $\beta$ -sheet character, each of the domains being separated by domains lacking  $\beta$ -sheet character;

wherein said targeting molecule is linked to at least one imaging agent by a substrate for an intracellular or extracellular enzyme associated with an epithelial barrier.

3. A targeting molecule according to claim 2, wherein said enzyme is selected from the group consisting of proteases, glycosidases, phospholipases, esterases, hydrolases and nucleases.

4. A targeting molecule linked to at least one imaging agent, wherein said targeting molecule comprises a polypeptide that:

(a) forms a closed covalent loop; and

(b) contains at least three peptide domains having  $\beta$ -sheet character, each of the domains being separated by domains lacking  $\beta$ -sheet character;

wherein said targeting molecule is linked to at least one imaging agent through a side chain of amino acids in an antibody combining site.

5. A targeting molecule linked to at least one imaging agent, wherein said targeting molecule comprises a polypeptide that:

(a) forms a closed covalent loop; and

(b) contains at least three peptide domains having  $\beta$ -sheet character, each of the domains being separated by domains lacking  $\beta$ -sheet character;

wherein the imaging agent is not naturally associated with the targeting molecule, and wherein the imaging agent is not iodine.

6. A targeting molecule according to claim 5, wherein said imaging agent is selected from the group consisting of metals, radioactive isotopes, radioopaque agents, radiolucent agents, contrast agents, dyes and enzymes.